

APBI 2005

CERDEC Overview Of Business Opportunities

Presented by
Mr. Gary Martin
Acting Technical Director,
CERDEC
14 June 2005

CERDEC Mission and Vision



Mission

To develop and integrate Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) Technologies that enable Information Dominance and Decisive Lethality for the Networked Warfighter

Vision

To be the DoD leader in integrated C4ISR technology solutions

Focus Areas / Priorities

- Support QRC activities in support of OIF/OEF
- Continue to develop critical technologies for DoD Transformation
- Increase transition of technologies to PM Managed programs of record
- Expand our System Engineering capability (integrated M&S, Architecture and Experimentation) to support current and Future Force requirements.
- Leverage Army C4ISR capabilities for HLS

CERDEC ORGANIZATION

OFFICE OF THE DIRECTOR

Technical Director (A) - Gary Martin (SES)
Associate Technical Director (A) - Henry Muller
Military Deputy - COL Derek Paquette
Chief Scientist - Dr. Arthur Ballato

HQ
STAFF

Associate Director Operations

Cynthia Bulman

Homeland Security Special Projects Office
(HLS SPO)

Anthony Anania
Director

Associate Director Systems Engineering
Robert Zanzalari

Combatant Command Interoperability Program Office
(CIPO)

John Siliato
Director (A)

Associate Director Technology & Strategic Planning
Mark Kovach

DIRECTORATES

Command and Control
(C2D)

Gerardo Melendez
Director

- Battle Command
- Army Power
- Battle Command Appl
- Quick Reaction & Battle Command Support
- Joint Concepts Dev

Space & Terrestrial Communications
(S&TCD)

Gary Blohm (SES)
Director

- Information Assurance
- Comms Systems Integration
- Wireless Systems
- Space & SATCOM Systems
- Soldier/Sensor Comms

Night Vision & Electronic Sensors
(NV&ESD)

A. Fenner Milton (SES)
Director

- Science and Technology Countermeasure
- Modeling and Simulation
- Aviation and Netted Sensors
- Ground Combat Systems
- Special Products & Prototyping

Intelligence & Information Warfare
(IIWD)

Anthony Lisuzzo (SES)
Director

- Information Operations
- Electronic Combat
- Coalition Combat ID
- SIGINT & Payload Integration
- Battlefield Awareness & Targeting

Software Engineering
(SED)

Mike Lombardi
Director (A)

- IEW Support
- Avionics Support
- Tactical Communications
- Satellite & Management Systems
- Information Technology En
- Advanced Battlespace
- Fire Support

ASA(ALT) PRIORITIES

ATO[D]

FCS Spiral Insertions:

- Enabling technologies for robust and dynamic networks
- Unmanned ground and air systems with mission equipment packages

Finding the Enemy (Intellegence, Surveillance and Reconnaissance):

- Sensor fusion applications
- Collaborative tools
- Aided target recognition

Networks:

- Technologies that fuse sensors and communications to enable architectures seamlessly compatible with the joint force

Survivability:

- Soldier protection technologies from ballistic to medical
- Force protection against mines and improvised explosive devices

Energy and Power:

- Compact lightweight high energy density mobile power technologies for Soldiers and platforms

Soldier enhancements:

- Technologies to provide individual Soldiers with netted C4ISR and lethality equivalent to capabilities available on platforms today
- Medical protection and treatment technologies

Non-Warfighting Technologies:

- Construction and other engineering technologies to increase survivability and reduce logistics burdens of the force

Modeling and Simulation:

- Technologies to evaluate systems of systems approaches to assume Unit of Action and Unit of Employment capabilities and to conduct campaign analyses of insurgencies and the Global War on Terrorism

Battle Command Decision Making:

- Technologies to enhance the commander's intellectual process to discern, assess, and act upon time-critical information



- Technologies that enable continuous operations in dynamic warfighting environment
- Secure mobile networking
- Directional antennas

- Technologies that enable paradigm-shifting capabilities such as lasers and electromagnetic guns

- Soldier protection technologies that enable “uniforms” with ballistic, electrical power and medical capabilities available only today through add on components or external intervention

- Devices and components that can reduce demands for batteries and generators by 50%

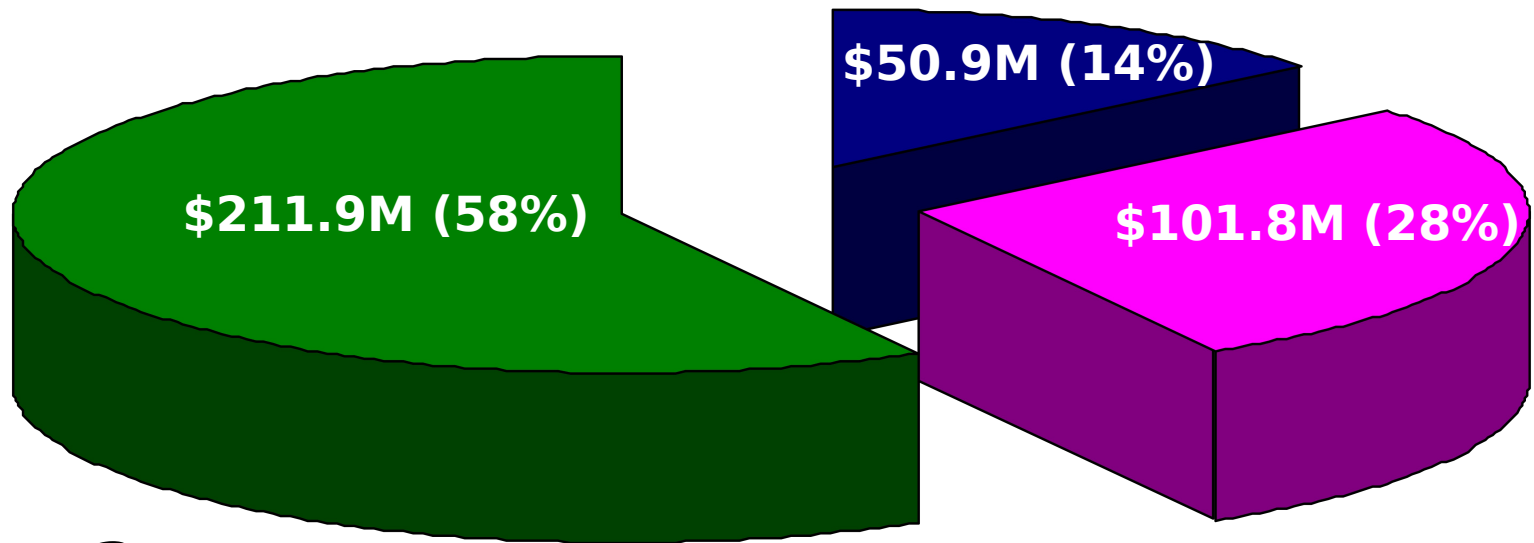
- Technologies to provide individual Soldiers with global networked capabilities (display, information processing, protocols)

- Advanced materials that reduce weight and maintenance of tactical structures by 50%

Technologies that enable holographic like, mission-rehearsal and operational evaluation systems

CERDEC Projected FY 06 Core Mission S&T

More Than 60% Available for Contract Opportunities



Top 3

**Antennas
Power
Sensors & Info Ops**

■ Other ■ 6.2 ■ 6.3

S&T Portfolio





ATO (D) For FY06

Digitally Fused Soldier Mobility System

CER-03

- **OBJECTIVE:** Head borne system integrating LWIR and VIS/NIR image fusion using low power ASIC and a high resolution HMD
- **CONTRACT TYPE:** BAA, multiple awards
- **KEY MILESTONES:**
 - 1QFY06: Fedbizops Announcement
 - 1QFY06: Briefing on program objectives to prospective bidders
 - 2QFY06: Request for Proposal
 - 3QFY06: Award Contracts
 - 1QFY07: Downselect to one contractor for the ASIC and prototype system development
 - 4QFY08: Transition of digital fusion ASIC to PM SSL
 - 4QFY09: Transition of DFSMS Prototype to PM-SSL
- **TECHNICAL CONTACT:** Aric Sherwood, 703-704-3669
- **ACQUISITION CONTACT:** Susie McDowell, 703-704-1252
- **SOLICITATION # OR RFQ #:** TBD

CECOM

PEO-C3T

PEO-IEW&S

PEO-EIS

CERDEC

COMMUNICATIONS ELECTRONICS LIFE CYCLE MANAGEMENT COMMAND



ATO (R) For FY06

High Performance Small Pixel Uncooled Infrared Focal Plan Array

CER 02

- **OBJECTIVE:** Develop an uncooled FPA with small pixels, high sensitivity, and lower time constant to enable large format arrays and high resolution cameras
- **CONTRACT TYPE:** BAA, multiple sources
- **KEY MILESTONES:**
 - 1QFY06: Fedbizops Announcement
 - 1QFY06: Briefing on Program to Prospective Bidders
 - 2QFY06: Award Multiple Contracts
 - 1QFY07: Downselect to most Promising Contracts (2 anticipated)
 - 1QFY08: Downselect for single contract for device fabrication
 - 3QFY09: Delivery of FPA for Test and Evaluation
- **TECHNICAL CONTACT:** Dr. Frank Pantuso, 703-704-5156
- **ACQUISITION CONTACT:** Susie McDowell, 703-704-1252
- **SOLICITATION # OR RFQ #:** TBD

C4EOM

PEO-CST

PEO-IEW&S

PEO-EIS

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COMMUNICATIONS ELECTRONICS LIFE CYCLE MANAGEMENT COMMAND



ATO (D) For FY06

Programmable Objective Encryption Technologies

CER-13

- **OBJECTIVE:** Design & develop a high throughput, robust, remotely configurable, multi-channel, COMSEC Module (CM) for use in future Joint Network architectures
- **CONTRACT TYPE: CPFF**
- **PERIOD OF PERFORMANCE:** 36-42 Months
- **ESTIMATED VALUE:** \$18-20M (single contract award, selected from two competing vendors)
- **KEY MILESTONES:**
 - Contract Award 2Q FY06
 - Demonstration 4Q FY08
- **TECHNICAL CONTACT:** Loring Hosley
- **ACQUISITION CONTACT:** Kristina Weaver (732) 427-1381
- **SOLICITATION # OR RFQ #: TBD**



ATO (D) For FY06

Wideband Power Amplifiers For JTRS Cluster 5

CER-20

- **OBJECTIVE:** Develop 5-Watt wideband (30 MHz- 2.8 GHz) power amplifier for the JTRS Cluster 5 Spiral 2 Small Form Fit core transceiver. The design should employ economical manufacturing qualification test methods and production processes validated using modeling & simulation and laboratory testing.
- **CONTRACT TYPE:** Cost Plus - BAA
- **ESTIMATED VALUE:** FY06-09 \$500K - \$1 M
- **KEY MILESTONES:**
 - BAA/RFP Released: 4Q FY04
 - Contract Award: 1Q FY06
 - Prototypes Delivered: 2Q FY07
- **TECHNICAL CONTACT:** Lisa Rulli (732)427-4646
- **ACQUISITION CONTACT:** Kristina Weaver (732)427-1381
- **SOLICITATION # OR RFQ #:** BAA DAAB07-03-R-P650, topic #S0409



ATO (D) For FY06

Affordable Directional Antenna and Pointing Technologies (ADAPT)

CER-07

- **OBJECTIVE:** Develop an affordable solution for directive antenna systems for OTM SATCOM and terrestrial antenna networking to support the Future Force Battle Command (Ku/Ka/Q bands).
- **CONTRACT TYPE: CPFF**
- **PERIOD OF PERFORMANCE: 3 Years**
- **ESTIMATED VALUE:**
 - \$3045K*: FY06
 - \$5145K*: FY07
 - \$10150K*: FY08
- **KEY MILESTONES:**
 - Contract Award 2Q FY06
 - Demonstration 3Q FY08
- **TECHNICAL CONTACT: Dave Khalil**
- **ACQUISITION CONTACT: Kristina Weaver (732) 427-1381**
- **SOLICITATION # OR RFQ #: TBD**

* includes PAs



ATO (D) For FY06
Body Wearable Antennas
CER-20

- **OBJECTIVE:** Develop Lightweight, Wideband Antennas (225-1000 MHz) for Integration Into Soldiers' Tactical Combat Wear
- **CONTRACT TYPE:** CPFF
- **PERIOD OF PERFORMANCE:** 14-18 Months
- **ESTIMATED VALUE:** \$200K- \$700K (each contract – 1 or 2)
- **KEY MILESTONES:**
 - Contract Award: 2Q FY06
 - LW/CL 5 Demonstrations: 4Q FY06/2Q FY07
- **TECHNICAL CONTACT:** Steve Goodall
- **ACQUISITION CONTACT:** Kristina Weaver (732) 427-1381
- **SOLICITATION # OR RFQ #:** TBD

ATO(D) For FY06
Tri-band Antennas
CER-20

- **OBJECTIVE:** Develop 3-port, omni-directional, ruggedized antennas for use on ground vehicles to support the legacy and JTRS WNW/SRW waveforms
- **CONTRACT TYPE:** CPFF
- **PERIOD OF PERFORMANCE:** 14-18 Months
- **ESTIMATED VALUE:** \$300K- \$800K (each contract)
- **KEY MILESTONES:** Contract Award FY06; Army/PM demonstrations FY07
- **TECHNICAL CONTACT:** Steve Goodall (732) 532 - 0445
- **ACQUISITION CONTACT:** Kristina Weaver (732) 427-1381
- **SOLICITATION # OR RFQ #:** TBD

ATO(D) For FY06
Tri-band Antennas
CER-20

- **OBJECTIVE:** Develop 3-port, omni-directional, ruggedized antennas for use on ground vehicles to support the legacy and JTRS WNW/SRW waveforms in the frequency bands of 30-90, 225-450 and 1300-2300 MHz.
- **CONTRACT TYPE:** CPFF
- **PERIOD OF PERFORMANCE:** 14-18 Months
- **ESTIMATED VALUE:** \$200K- \$800K (each contract – 1 or 2)
- **KEY MILESTONES:**
 - Contract Award: 2Q FY06
 - Army/PM demonstrations: 3Q FY07
- **TECHNICAL CONTACT:** Steve Goodall
- **ACQUISITION CONTACT:** Kristina Weaver (732) 427-1381
- **SOLICITATION # OR RFQ #:** TBD



ATO (D) For FY06
WNW High Gain Antennas
CER-20

- **OBJECTIVE:** Develop high gain, omni-directional, ruggedized antennas for use on ground vehicles to support the WNW link connectivity requirements in the frequency bands of 400-960 & 1200-2000 MHz.
- **CONTRACT TYPE:** CPFF
- **PERIOD OF PERFORMANCE:** 14-18 Months
- **ESTIMATED VALUE:** \$200K- \$500K (each contract) – 1-2 contracts
- **KEY MILESTONES:**
 - Contract Award: 2Q FY06
 - Army/PM demonstrations: 4Q FY07
- **TECHNICAL CONTACT:** Steve Goodall
- **ACQUISITION CONTACT:** Kristina Weaver (732) 427-1381
- **SOLICITATION # OR RFQ #:** TBD

ATO (D) For FY06

ACID RAIN

CER-08

- **OBJECTIVE:** This technology objective will develop fractal, low Q, high efficiency , multi-octave omni antennas; Low cost, multi-octave, high efficiency amplifiers; Digital wide band, high dynamic range, receivers; Improved jamming algorithms. Additionally, it will develop RF probing techniques; High sensitivity/fast scan receivers; High gain directional antennas; Novel selective neutralization techniques
- **CONTRACT TYPE:** CPFF
- **PERIOD OF PERFORMANCE:** 14-18 Months
- **ESTIMATED VALUE:** \$300K- \$700K (each contract)
- **KEY MILESTONES:** Contract Award FY06; Army/PM demonstrations FY09
- **TECHNICAL CONTACT:** Dowell Black (732) 427-7002
- **ACQUISITION CONTACT:** Kristina Weaver (732) 427-1381
- **SOLICITATION # OR RFQ #:** TBD

ATO (D) For FY06

Combat Identification

CER-14

- **OBJECTIVE:**

- Soldier-to-Soldier, Vehicle and Aerial Platforms: Reduce hardware size and weight by incorporating advanced electronics and packaging designs, such as custom ASICs; Improved materials for Soldier ID systems; Improve upon low power, small size interrogator and RF Tag designs; Investigate communication message sets that facilitate a collaborative exchange of GP and SA data in a Battle Command and Control environment.
- UA CID: Develop custom ASICs for interrogation and reply processing crypto that will meet size/weight/power limitations; Develop interface and time commutation scheme to allow dual antenna functionality without causing interference to UA MFRF performance.

- **CONTRACT TYPE:** CPFF

- **PERIOD OF PERFORMANCE:** 14-18 Months

- **ESTIMATED VALUE:** 3 contracts ~ \$1M each

- **KEY MILESTONES:** Contract Award FY06; Army/PM demonstrations FY07

- **TECHNICAL CONTACT:** Steve Haught

- **ACQUISITION CONTACT:** TBD

- **SOLICITATION # OR RFQ #:** TBD



ATO (D) For FY06

Hostile Fire Indicator and Countermeasures

CER-09

- **OBJECTIVE:** Develop US/UK signature collection of SA, RPG and FA sources; Develop common US/UK detect and classification algorithms for CMWS; Conduct M&S on algorithms to optimize FA rate and TTPs; Integrate optical CM; Develop cueing algorithm to aid gunner station for situational awareness
- **CONTRACT TYPE:** CPFF
- **PERIOD OF PERFORMANCE:** 24 Months
- **ESTIMATED VALUE:**
 - HFI contract for upgrading CMWS - \$2 Million (2 years)
- **KEY MILESTONES:** Contract Award FY06; Army/PM demonstrations FY07
- **TECHNICAL CONTACT:** Chris Cole
- **ACQUISITION CONTACT:** TBD
- **SOLICITATION # OR RFQ #:** TBD



ATO (D) For FY06

Urban Sabre

CER-12

- **OBJECTIVE:** Development of a techniques library to house innovative IO approaches that will enable effective engagement of multiple targets in multiple frequency bands simultaneously; Development of digital signal adaptive array processing techniques to overcome multipath and co-site/co-channel interference problems; Develop and implement traffic analysis tools and techniques to map complex communications networks, and to identify user relationships across multiple networks; Develop an automated, policy based analysis approach to aid in the identification of hostile entities; Leverage commercially available software programmable platform and develop a modular software architecture that supports rapid insertion of emerging wireless technologies
- **CONTRACT TYPE:** CPFF
- **PERIOD OF PERFORMANCE:** 14-18 Months
- **ESTIMATED VALUE:** 2 contracts each in \$300K- \$700K; 2 contracts in \$1M range.
- **KEY MILESTONES:** Contract Award FY06; Army/PM demonstrations FY07
- **TECHNICAL CONTACT:** Jon Smolenski
- **ACQUISITION CONTACT:** TBD
- **SOLICITATION # OR RFQ #:** TBD



ATO (R) For FY06

Next Generation Electronic Warfare Technology for Survivability

CER-10

- **OBJECTIVE:** Develop Multi-Band Lasers with Power, duty cycle and wavelength in all tiers necessary bands to counter different threats (SAMs, imaging MANPADS, ATGMs); Non-mechanical beam steering devices mature enough to replace expansive mechanical gimbals; Low loss MWIR optical fibers that can distribute CM energy; Mature MWIR beam combiners and switches for aircraft distribution architecture; Exploitation data on next generation IR and RF threat systems; Efficient Millimeter Wave Power Amplifiers (MMW PA)
- **CONTRACT TYPE:** CPFF
- **PERIOD OF PERFORMANCE:** 12 Months
- **ESTIMATED VALUE:**
 - Lab Support Contract - \$900k (12 months)
 - Optical Beam Steering Contract - \$200k (12 months)
- **KEY MILESTONES:** Contract Award FY06; Army/PM demonstrations FY07
- **TECHNICAL CONTACT:** Chris Cole
- **ACQUISITION CONTACT:** TBD
- **SOLICITATION # OR RFQ #:** TBD

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CERDEC

COMMUNICATIONS ELECTRONICS LIFE CYCLE MANAGEMENT COMMAND

Future Force Power Systems

- **OBJECTIVE:** Deliver demonstration cooling technologies, Stirling engines, batteries, and fuel cell systems showing improvements in both performance and level of development over the course of the program.
- **CONTRACT TYPE:** Cost Plus Fixed Fee
- **ESTIMATED VALUE:** Approximately \$1M on cooling, \$2M on fuel cell, \$1.5 on Stirling, and \$.5M on batteries
- **CURRENT CONTRACTS:** Contracts awarded in FY05 for power management, Stirling, and fuel cell efforts. Awardees included DEKA, Sunpower, Ultracell, Idatech, Pacific Northwest National Labs, and MTC. Total value of external contracts in FY05 was approximately \$4.8M. Additional contract pending in fuel reforming area.
- **KEY MILESTONES:** Oct 05 White Papers accepted, December 05 evaluations complete, Mar 06 awards completed
- **TECHNICAL CONTACT:** Chris Bolton 703-704-1995, cbolton@armypower.army.mil
- **ACQUISITION CONTACT:** Kristian Weaver, 732-427-1381; Pat Davis, 703-325-1713
- **SOLICITATION # or RFQ #:** BAA W909MY-04-R-0025 (Cooling Technologies); W909MY-05-R-0004 (Fuel Cells); DAAB07-01-R-0429 (Batteries); BAA pending on Stirlings

SMALL BUSINESS INNOVATION RESEARCH PROGRAM



SMALL BUSINESS INNOVATION RESEARCH

- **OBJECTIVE:** To stimulate technological innovation, strengthen role of small business in DoD R&D needs, foster & encourage participation by minority/disadvantaged persons, increase commercial application of DoD supported research in R&D results.
 - Phase I Feasibility Study, 6 month effort NTE \$70K each, Optional Funding NTE \$50K each
 - Phase II R&D 2 year effort NTE \$730K each, Phase II Plus 1 year effort \$250K Matching
 - Phase III Commercialization, Funding from Non-SBIR Source
- **CONTRACT TYPE:** Firm Fixed Price (FFP)
- **ESTIMATED VALUE:** \$5M Total For New Phase I Programs

46 Topics

Advanced Materials & Manufacturing

Improved Thermal Management for High Power and/or Small Form Factor Tactical Radios

Microelectronics & Photonics

Adaptive Bandwidth Service
Joint Tactical Radio System Cluster 5 Amplifier

Sensors & Information Processing

Multi-Mode Combat ID
Detection of Improvised Explosive Devices

High Performance Computing & Simulation

Intelligent Agent Research
Solder-Borne Biometric Authentication System

Power & Directed Energy

Advanced Tactical 2 KW Stirling Power Sources for Co-Generation Applications
Heat Actuated Cooling System

- **KEY MILESTONES:**

Solicitation Period: 15 June – 15 July 2005 Contract Award 14 November 2005

- **PROGRAM CONTACT:** Suzanne Weeks, (732) 427-3275
- **ACQUISITION CONTACT:** Robert Calaway (732) 532-5562

Phase III Success Story

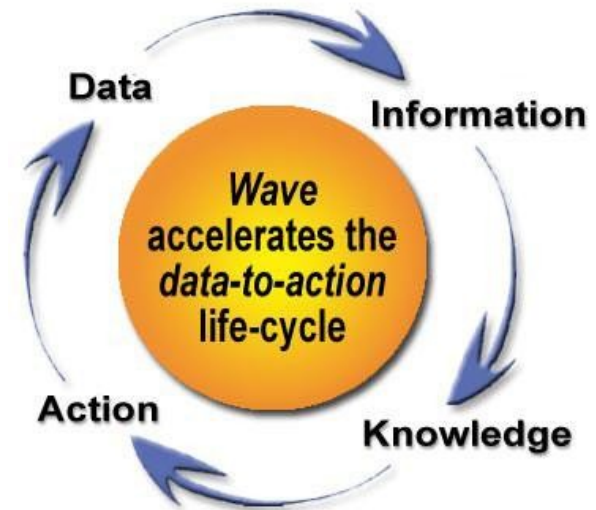
Guardrail Enhanced & Modernized INtegrated Infrastructure (GEMINI) Project



Impact:

- Awarded Army Contract for \$9.3M
- Wave commercial product for information integration

- Other Wave customers include USAF 45th Space Wing and Naval Air Systems Command
- \$442K follow-on investment in Wave by USAF and Jacobs Sverdrup
- Phase III partnerships with Jacobs



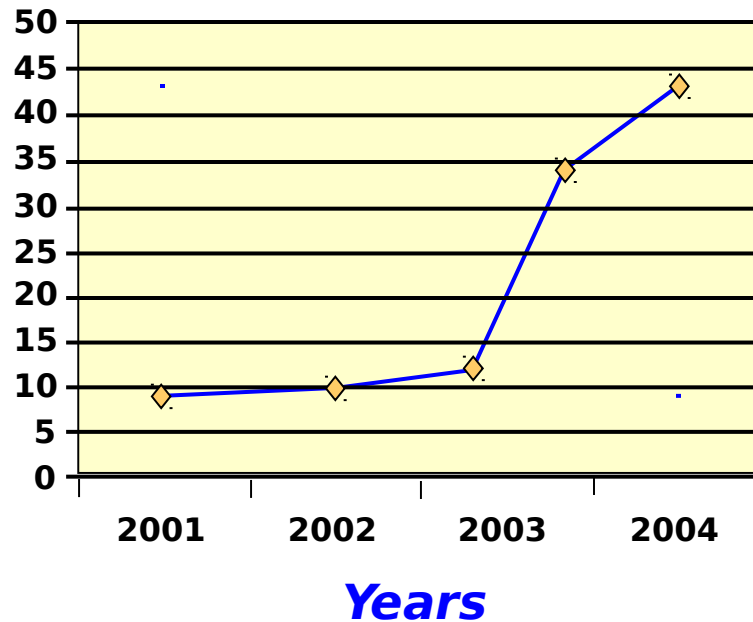
Drexel Camden Incubator Center

Primary Goals:

1. Attract start-up companies that have developed innovative technologies for military and commercial applications including those started with Drexel and Sarnoff Technology
2. Provide connectivity and access to various government agencies and departments to help start-up companies secure government contracts for their technology products
3. Incubate & Commercialize technology developed by Drexel and Sarnoff Research & Development (R&D) projects
4. POC: Joe Brady (856) 614-5411

Participating Technology Companies

Number of Companies



Date	# Of Companies	# Of Seats
12/01	9	38
06/02	10	43
12/03	12	54
06/03	34	87
12/04	43	95

Incubator Success Stories

1. Gestalt, LLC

- Year entered: 2002
- Interoperability, Modeling & Simulations
- Start-up to 100 employees
- \$35M sales projected 2005
- \$10M Venture Capital



2. Channel Logistics, Inc.

- Year entered: 2001
- Database Analysis Shipping Industry
- \$2M Revenue



3. Alpha Grid Smarter Agent, Inc

- Year entered: 2001
- Location Aware/GPS Software
- Contracts with Banks and Real Estate Companies
- Working on \$7.5M investment



Questions



Back-UP

Technology & Strategic Planning

Proposed New ATO (R)s For FY06

- **CER - 02 - High Performance Small Pixel Uncooled Infrared Focal Plane Array**
 - Small Pixel MEMS design that provides low NEDT -enables large format arrays, high resolution cameras
 - Small Pixel ROIC design
 - Packaged, small pixel, large format focal plane array
 - Shorter time constants
 - Test data
 - Estimated Value: FY06
- **CER - 10 - Next-Generation Electronic Warfare Technology for Survivability**
 - Alternative multi-band laser concepts with selectable beam steering/switching capability to defeat multiple EO/IR/RF Threats
 - Effective countermeasure techniques against next-generation threat systems
 - Estimated Value: FY06

Technology & Strategic Planning

Proposed New ATO (D)s For FY06

- **CER - 03 - Digitally Fused Soldier Mobility System (DFSMS)**
 - (4) Prototype low power digitally fused 40° Field of View (FOV) LWIR and VIS/NIR vision systems.
 - Data port for import/export of data/imagery.
- **CER - 04 - 3rd Generation Multi-Spectral AiTR Development**
 - Alternative multi-band laser concepts with selectable beam steering/switching capability to defeat multiple EO/IR/RF Threats
 - Effective countermeasure techniques against next-generation threat systems
 - Estimated Value: FY06
- **CER - 07 - Affordable Directional Antenna and Pointing Technologies (ADAPT)**
 - Low-cost Ku/Ka/Q-band OTM SATCOM antennas
 - Efficient Ka/Q band power amplifier
 - Affordable On-the-Move Directive Antennas Interfaced with WIN-T / General Dynamics (GD) Beam Forming Protocols

Technology & Strategic Planning

Proposed New ATO (D)s For FY06

Continued

- **CER - 08 - ACID RAIN**

- Advanced Countermeasures for IED Defeat (ACID) subsystem- improved receivers, amplifiers, antennas, and algorithms for block upgrades to the CREW program.
- Reconnaissance And IED Neutralization (RAIN) prototype subsystem (leveraging HW from CREW Spiral 2 and the ACID work package)- RF probing algorithms, characterization signatures, selective neutralization techniques.
- Integrated ACID and RAIN capability for potential transition to the CREW program and FCS.
- RF propagation models and hardware in the loop simulations.

- **CER - 09 - Hostile Fire Indicator and Countermeasures**

- Modified software algorithms for the Common Missile Warning System (AN/AAR-57)
- Integrated Optical Countermeasure
- Modified software for pilot/cockpit display (AN/APR-39A(V)1)
- Sensor Performance Models

Technology & Strategic Planning

Proposed New ATO (D)s For FY06

Continued

- **CER - 12 - Urban Sabre**

- An Information Operations (IO) library encompassing these innovative EA techniques.
- An integrated system that will do the job of multiple present day Offensive IO systems (based on a flexible/modular architecture to handle emerging threat technologies).
- Traffic Analysis algorithms to do predictive hostility analysis (Friend or Foe), Network Mapping (Primary and associated nodes), data thinning/mining, and language/speech recognition.
- Adaptive array technology and processing enabling greater standoff distances and better performance against the traffic expected in an urban environment.
- System for Triaging Key Evidence (STRIKE) – Immediate automated forensic capability for confiscated digital devices.

Technology & Strategic Planning

Proposed New ATO (D)s For FY06

Continued

- **CER - 13 - Programmable Objective Encryption Technologies (POET)**

- A Crypto Module that provides:
- The first high-speed (aggregate up to 1.1 Gbps) embeddable CM for Above 2-GHz tactical communications that is capable of processing real-time UAV & UGV ISR video data to joint battle commanders for integration into future DoD architectures.
- Net-centric remote monitor, control, and reaction to hostile take-over of tactical SATCOM terminals thus protecting classified data.
- Compatibility with secure NSA High Assurance IP Encryption (HAIPe) v3.1
- A SCA v3.0 compliant, programmable CM that uses loadable cryptographic algorithms supporting multiple mission requirements

- **CER - 14 - Combat ID**

- Soldier-to-Soldier positioning Geometric Pairing (GP) Algorithms for Combat Net Radio Systems (CNRS)
- Soldier Radio Frequency (RF) Tags STANAG 4579 compliant mmW ID capability in custom Application Specific Integrated Circuits (ASICs)

Technology & Strategic Planning

Proposed New ATO (D)s For FY06

Continued

- **CER - 19 - Low Cost Threat Warning**

- 1 Prototype system with 2 color PbSe FPAs offering 360° coverage.
- Four 256 x 256 FPAs
- 2 color IR processor with algorithms
- Threat Signature Database

- **CER - 20 - Antenna Technologies**

- Tri-band (multiport) omni-directional prototypes
- WNW high gain omni-directional prototypes
- Integrated body wearable vest & helmet prototypes
- Ballistically protected low profile omni-directional prototypes